



United States
Department of
Agriculture

Forest
Service

Southwestern
Region

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Caring for the Land and Serving People

Reply to: 3420

Date: December 11, 1987

Subject: Western Spruce Budworm Biological Evaluation, Alpine Ranger District

To: Forest Supervisor, Apache-Sitgreaves National Forests

In July and September 1987, Forest Pest Management conducted both aerial detection and ground surveys to determine the extent, severity, and trend of the current western spruce budworm (WSB) outbreak on the Alpine Ranger District (RD), Apache-Sitgreaves National Forests (NFs). Ground surveys consisted of the collection of egg mass density data and current year's defoliation estimates. Western spruce budworm egg mass density data and visual defoliation estimates were obtained from a total of 14 sample plots (refer to enclosed map) located at Cache Cienega (3 plots), Slaughter Draw (3 plots), the Double Sale area (3 plots), and the South McKibbens Sale area (5 plots).

Results

The results of our aerial detection survey (refer to 3410 letter of August 3) and egg mass survey data (enclosed table) show WSB infestations on the Alpine RD have declined and are currently at low levels. Defoliation damages aeri-ally detected on this District in 1985 and 1986 were undetectable in 1987. Follow-up ground surveys conducted in mixed conifer stands defoliated in 1985 and 1986 did reveal some low level WSB activity (Slaughter Draw and the Double and South McKibbens Sale areas), however, defoliation, visually estimated at <5 to 20 percent of the current year's foliage growth¹, was too light to be detected from aerial surveys. Egg mass densities, used to predict the following year's defoliation trends, confirmed WSB activity on this District is declining. Egg mass densities per square meter of foliage decreased from 8.6 in 1985 and 8.0 in 1986 to 2.5 in 1987. These data indicate WSB populations and subsequent defoliation damages on the Alpine RD will remain at insignificant levels again in 1988.

Recommendations

Management recommendations for the current WSB outbreak on the Alpine RD remain essentially unchanged from those presented in our 3420 letter of November 4, 1986. These include:

1. Monitoring--District personnel should continue to monitor and record all new observations of WSB-related defoliation damages. Forest Pest Management

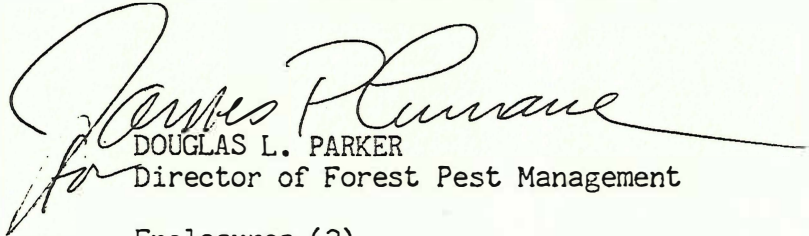
¹In order to be aeri-ally detected defoliation to current year's foliage growth must exceed 35 percent.





will continue to monitor and report all current and new WSB activity aerially detected in 1988. As the need arises, follow-up ground surveys will be conducted upon request.

2. Silvicultural Treatments--Efforts should be made to identify all high priority mixed conifer stands at or approaching "high risk" to WSB damages. Silvicultural treatments prescribed for these stands should have a major objective of reducing overall budworm susceptibility and vulnerability. Cutting strategies for achieving this objective appear in FSH 2409.26a, Cutting Methods Handbook. Since dwarf mistletoe is also abundant in many stands, their impacts should be considered concurrently.


DOUGLAS L. PARKER
Director of Forest Pest Management

Enclosures (2)





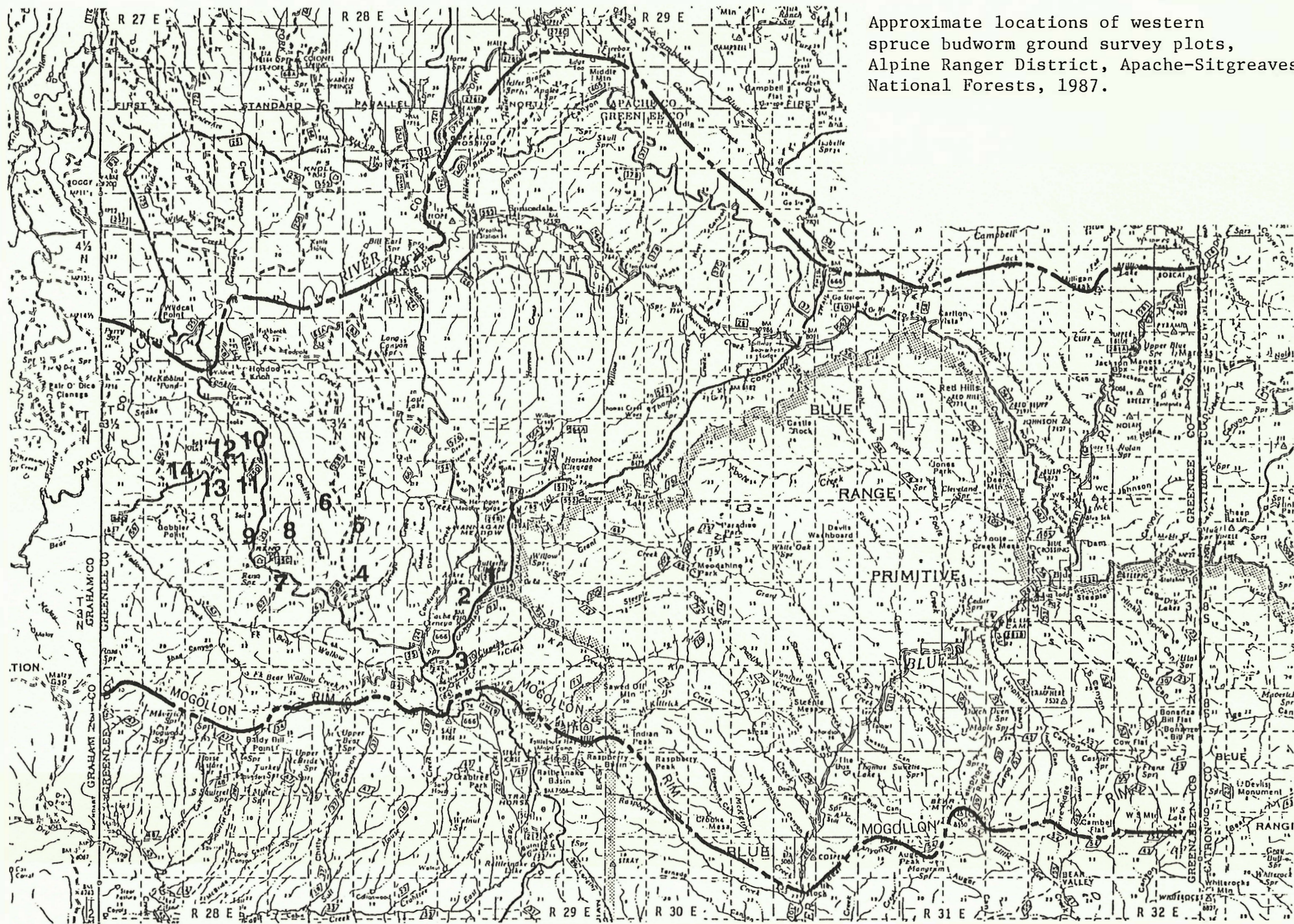
WESTERN SPRUCE BUDWORM EGG MASS SURVEY DATA
ALPINE RANGER DISTRICT
APACHE-SITGREAVES NATIONAL FORESTS
ARIZONA
1987

Plot No.	Branch Area (LXW)/2	Egg Mass Densities Per Meter Square	1987 Defoliation ¹	Habitat Type ²
1	.1728	0.0	Undetectable	PIPU/EREX
2	.1487	0.0	Undetectable	PIPU/EREX
3	.1594	0.0	Undetectable	PIPU/CAFO
4	.1231	1.5	Undetectable	ABCO/MUVI
5	.1631	1.2	Undetectable	ABCO/MUVI
6	.1271	0.0	Undetectable	PSME/MUVI
7	.1952	0.0	Undetectable	ABCO/MUVI
8	.1515	5.2	Light	ABCO/EREX
9	.1176	11.1	Light	ABCO/EREX
10	.1701	2.8	Undetectable	PSME/MUVI
11	.1937	1.4	Undetectable	PSME/MUVI
12	.1845	5.8	Light	PSME/QUGA
13	.1705	5.8	Light	ABCO/MUVI
14	.1526	1.1	Undetectable	ABCO/MUVI
Mean	.1593	2.6		
S.E.	.0066	0.9		

¹Defoliation to new growth: Undetectable = <5%; Light = 5 to 35%; Moderate = 35 to 65%; Heavy = >65%.

²Forest and woodland habitat types (plant associations) of southern New Mexico and central Arizona (north of the Mogollon Rim). USDA-FS, Southwestern Region. 77 p.





Approximate locations of western spruce budworm ground survey plots, Alpine Ranger District, Apache-Sitgreaves National Forests, 1987.